

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended): A system for assisting the regeneration of depollution means ~~(1)~~ associated with oxidation catalyst-forming means ~~(2)~~, and integrated in an exhaust line ~~(3)~~ of a motor vehicle diesel engine ~~(4)~~, in which the engine is associated with common rail feed means ~~(7)~~ for injecting fuel into the cylinders of the engine, including at least one post-injection, and adapted, at constant torque, to implement at least two regeneration strategies ~~(10, 11)~~, at a first level and at a second level, depending on different engine operation control parameters in order to obtain different temperature levels in the exhaust line, the temperature level corresponding to the second level strategy ~~(10)~~ being higher than that corresponding to the first level strategy ~~(11)~~, the system ~~being characterized in that it includes~~ including acquisition means ~~(9)~~ for acquiring the exothermic temperature level of the catalyst-forming means ~~(2)~~, comparator means ~~(8)~~ for comparing this exothermic temperature level with a safety threshold ~~(safe_th)~~ for the catalyst-forming means ~~(2)~~, so that in the event of said threshold value being exceeded while applying the second level strategy ~~(10)~~, the feed means ~~(7)~~ are controlled to regulate progressively at least one of the engine operation control parameters in such a manner as to reduce the exothermic temperature level of the catalyst-forming means ~~(2)~~, and if this level does not drop below the threshold value at the end of a first predetermined time period, to control the feed means ~~(7)~~ to switch over to the first level strategy ~~(11)~~, and if said exothermic temperature level of the catalyst-forming means still does not drop below the safety threshold value at the end of a second period of time, to stop the regeneration strategy; wherein:

~~in that~~ the feed means ~~(7)~~ are adapted to implement two successive post-injections;

~~in that~~ during regulation, the feed means ~~(7)~~ are adapted to reduce progressively the flow rate of fuel in the second post-injection~~;~~ and ~~in that~~

 the feed means ~~(7)~~ are adapted to reduce the flow rate of the second post-injection by using a correction factor lying in the range 0 to 1 and determined on the basis of the difference between the exothermic temperature level ~~(NT)~~ and the safety threshold value ~~(safe_th)~~.

2. (Currently amended): A system according to claim 1, ~~characterized in that~~ wherein the correction factor is determined by a PI type regulator ~~(13)~~ having non-linear gain.

3. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the acquisition means ~~(9)~~ for acquiring the exothermic temperature comprise two temperature sensors ~~(9a, 9b)~~, one placed upstream and the other placed downstream from the catalyst-forming means ~~(2)~~.

4. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the engine ~~(4)~~ is a diesel engine associated with a turbocharger ~~(5, 6)~~.

5. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the value of the safety threshold ~~(safe_th)~~ is calibratable.

6. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the depollution means ~~(1)~~ comprise a particle filter.

7. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the depollution means ~~(1)~~ comprise a NOx trap.

8. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the depollution means ~~(1)~~ comprise a SOx trap.

9. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the depollution means ~~(1)~~ comprise an oxidation catalyst.

10. (Currently amended): A system according to ~~any preceding claim, characterized in that~~ 1, wherein the fuel includes an additive for being deposited together with the particles of which it is mixed on the depollution means ~~(1)~~ in order to facilitate regeneration thereof.

11. (Currently amended): A system according to ~~any one of claims 1 to 9, characterized in that~~ claim 1, wherein the fuel includes an additive forming a NOx trap.